What is claimed is:

1. A hydrogel biomedical article formed from macromers having a polymeric backbone comprising units having a 1,2-diol or 1,3-diol structure and at least two pendant chains bearing crosslinkable groups.

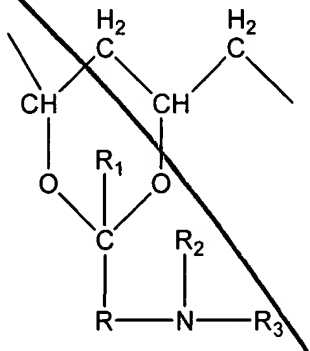
2. The hydrogel biomedical article of claim 1, wherein the backbone polymer is a polyhydroxy polymer.

3. The hydrogel biomedical article of claim 1, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via the 1,2-diol or 1,3-diol groups.

4. The hydrogel biomedical article of claim 1, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via cyclic acetal linkages.

5. The hydrogel biomedical article of claim 1, wherein the backbone polymer comprises poly(vinyl alcohol) (PVA) and copolymers thereof.

6. The hydrogel biomedical article of claim 1, wherein the macromer has the formula:



in which R is a linear or branched C_1-C_8 alkylene or a linear or branched C_1-C_{12} alkane; R_1 is hydrogen, a C_1-C_6 alkyl, or a cycloalkyl; R_2 is hydrogen or a C_1-C_6 alkyl; and R_3 is an olefinically unsaturated electron attracting copolymerizable radical having up to 25 carbon atoms.

7. The hydrogel biomedical article of claim 1, wherein the macromer further comprises pendant modifier groups.

8. The hydrogel biomedical article of claim 1, further comprising an active agent.

9. The hydrogel biomedical article of claim 8, wherein the hydrogel releases the active agent over a period of time ranging from about 1 day to 6 months.

10. The hydrogel biomedical article of claim 1, wherein the hydrogel is biodegradable.

11. The hydrogel biomedical article of claim 1, further comprising a contrast agent.

12. The hydrogel biomedical article of claim 1, wherein the crosslinkable groups are crosslinked via free radical polymerization.

13. The hydrogel biomedical article of claim 11, wherein the free radical polymerization is redox initiated.

14. The hydrogel biomedical article of claim 12, wherein the crosslinkable groups are olefinically unsaturated groups.

15. The hydrogel biomedical article of claim 1, wherein the article is selected from the group consisting of a catheter, tubing, vascular graft, heart valve, suture, prosthesis, dialysis membrane, filter, sensor, wound dressing, and drug delivery article.

16. The hydrogel biomedical article of claim 1, wherein the article is a microsphere.

17. The hydrogel biomedical article of claim 1, wherein the hydrogel is a coating on the article.

18. The hydrogel biomedical article of claim 1, wherein the article is formed in a mold.

19. The hydrogel biomedical article of claim 1, wherein the article is formed on a substrate.

20. A method of making hydrogel biomedical articles comprising crosslinking macromers having a polymeric backbone comprising units having a 1,2-diol or 1,3-diol structure and at least two pendant chains bearing crosslinkable groups.

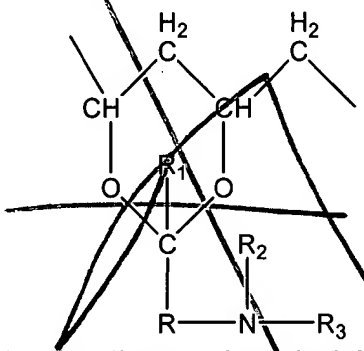
21. The method of claim 20, wherein the backbone polymer is a polyhydroxy polymer.

22. The method of claim 20, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via the 1,2-diol or 1,3-diol groups.

23. The method of claim 20, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via cyclic acetal linkages.

24. The method of claim 20, wherein the polymer comprises poly(vinyl alcohol) (PVA) and copolymers thereof.

25. The method of claim 20, wherein the macromer has the formula:



in which R is a linear or branched C_1-C_8 alkylene or a linear or branched C_1-C_{12} alkane; R_1 is hydrogen, a C_1-C_6 alkyl, or a cycloalkyl; R_2 is hydrogen or a C_1-C_6 alkyl; and R_3 is an olefinically unsaturated electron attracting copolymerizable radical having up to 25 carbon atoms.

26. The method of claim 20, wherein the macromer further comprises pendant modifier groups.

27. The method of claim 20, further comprising administering an active agent.

28. The method of claim 27, wherein the active agent is encapsulated in the hydrogel.

29. The method of claim 28, wherein the hydrogel releases the active agent over a period of time ranging from about 1 day to 6 months.

29. The method of claim 20, wherein the hydrogel is biodegradable.

30. The method of claim 20, further comprising administering a contrast agent.

31. The method of claim 20, wherein the crosslinkable groups are crosslinked via free radical polymerization.

32. The method of claim 20, wherein the free radical polymerization is redox initiated.

33. The method of claim 20, wherein the crosslinkable groups are olefinically unsaturated groups.

34. The method of claim 20, wherein the article is selected from the group consisting of a catheter, tubing, vascular graft, heart valve, suture, prosthesis, dialysis membrane, filter, sensor, wound dressing, and drug delivery article.

35. The method of claim 20, wherein the article is a microsphere.

36. The method of claim 20, wherein the hydrogel is formed as a coating on the article.

37. The method of claim 20, wherein the article is formed in a mold.

38. The method of claim 20, wherein the article is formed on a substrate.